AMENDMENTS

Amendments to the Claims:

The following listing of claims replaces all previous listings or versions thereof:

1-13. (Canceled).

14. (Currently amended) A purified human alpha subunit of an SCN1A sodium channel nucleic acid sequence comprising a nucleic acid sequence selected from the group consisting of:

(a) the nucleic acid sequence of SEQ ID NO:1;

(b) a full[[-]]~~length~~ complement of (a); ~~and~~

(c) a nucleic acid sequence ~~having~~ at least 95% ~~identity to the full-length nucleic acid sequence in (a) or (b)~~ identical to SEQ ID NO:1, wherein the nucleic acid encodes an alpha subunit of an SCN1A sodium channel;

(d) a SCN1A nucleic acid fragment selected from the group consisting of:

(i) an amplified segment comprising the nucleic acid sequence from nucleotide 739 to 867 of SEQ ID NO:1,

(ii) an amplified segment comprising the nucleic acid sequence from nucleotide 739 to 867 of SEQ ID NO:1 having a mutation at nucleotide 828,

(iii) an amplified segment comprising the nucleic acid sequence from nucleotide 3970 to 4143 of SEQ ID NO:1,

(iv) an amplified segment comprising the nucleic acid sequence from nucleotide 3970 to 4143 of SEQ ID NO:1 having a mutation at position 3978,

(v) an amplified segment comprising the nucleic acid sequence from nucleotide 5521 to 5747 of SEQ ID NO:1, and

(vi) an amplified segment comprising the nucleic acid sequence from nucleotide 5521 to 5747 of SEQ ID NO:1 having a mutation at position 5582.

15.-16. (Canceled)

17. (Previously presented) A vector comprising any one of the sequences of claim 14.

18.-19. (Canceled)

20. (Previously presented) An isolated cell harboring a vector of claim 17.

21.-22. (Canceled)

23. (Currently amended) ~~The~~ A purified nucleic acid ~~of claim 14, wherein said~~ comprising a nucleic acid at least 95% identical to ~~sequence is~~ SEQ ID NO:1; wherein the nucleic acid ~~and~~ encodes an alpha subunit of an SCN1A ~~a protein that possesses a~~ sodium channel ~~function~~.

24. (Currently amended) ~~The~~ A method of evaluating a nucleic acid sample from a subject to determine predisposition of the subject to idiopathic generalized epilepsy, comprising evaluating the presence of a variant alpha subunit SCN1A nucleic acid in said nucleic acid sample by comparing same to the purified nucleic acid of claim 14, wherein said variant alpha subunit SCN1A nucleic acid is at least 95% identical to SEQ ID NO:1, and wherein the presence of said variant SCN1A nucleic acid in [[a]] said nucleic acid sample ~~of a subject indicated~~ indicates that the subject has an increased risk of idiopathic generalized epilepsy.

25. (Currently amended) The ~~purified nucleic acid~~method of claim 24, wherein said variant alpha subunit SCN1A nucleic acid comprises ~~the following mutation~~:

(a) a mutation at position 828 of SEQ ID NO: 1;

(b) ~~a mutation at position 3978 of SEQ ID NO: 1;~~ a GCATTTGACGATATA (SEQ ID NO:190) nucleotide sequence; or

(c) ~~a mutation at position 5581 of SEQ ID NO: 1; and~~ an ATCATATACTTCCTG (SEQ ID NO:192) nucleotide sequence

~~(d) any combination of (a) - (c).~~

26.-29. (Canceled)

30. (New) The purified nucleic acid of claim 14, wherein said SCN1A nucleic acid fragment in (d) comprises a GCATTTGACGATATA (SEQ ID NO:190) or an ATCATATACTTCCTG (SEQ ID NO:192) nucleotide sequence.

31. (New) The purified nucleic acid of claim 23, encoding the alpha subunit of SCN1A set forth in SEQ ID NO:3.

32. (New) The purified nucleic acid of claim 23, encoding the alpha subunit of SCN1A set forth in SEQ ID NO:3, wherein aspartic acid residue at position 188 is replaced by a valine residue.

33. (New) The purified nucleic acid of claim 23, encoding the alpha subunit of SCN1A set forth in SEQ ID NO:3, wherein glutamic acid residue at position 1238 is replaced by an aspartic acid residue.

34. (New) The purified nucleic acid of claim 23, encoding the alpha subunit of SCN1A set forth in SEQ ID NO:3, wherein serine residue at position 1773 is replaced by a tyrosine residue.

35. (New) The method of claim 24, wherein said variant SCN1A nucleic acid is at least 95% identical to an SCN1A nucleic acid encoding the alpha subunit of SCN1A set forth in SEQ ID NO:3.

36. (New) The method of claim 35, wherein said variant alpha subunit encodes the SCN1A set forth in SEQ ID NO:3, wherein aspartic acid residue at position 188 is replaced by a valine residue.

37. (New) The method of claim 35, wherein said variant alpha subunit encodes the SCN1A set forth in SEQ ID NO:3, wherein glutamic acid residue at position 1238 is replaced by an aspartic acid residue.

38. (New) The method of claim 35, wherein said variant alpha subunit encodes the SCN1A set forth in SEQ ID NO:3, wherein the serine residue at position 1773 is replaced by a tyrosine residue.